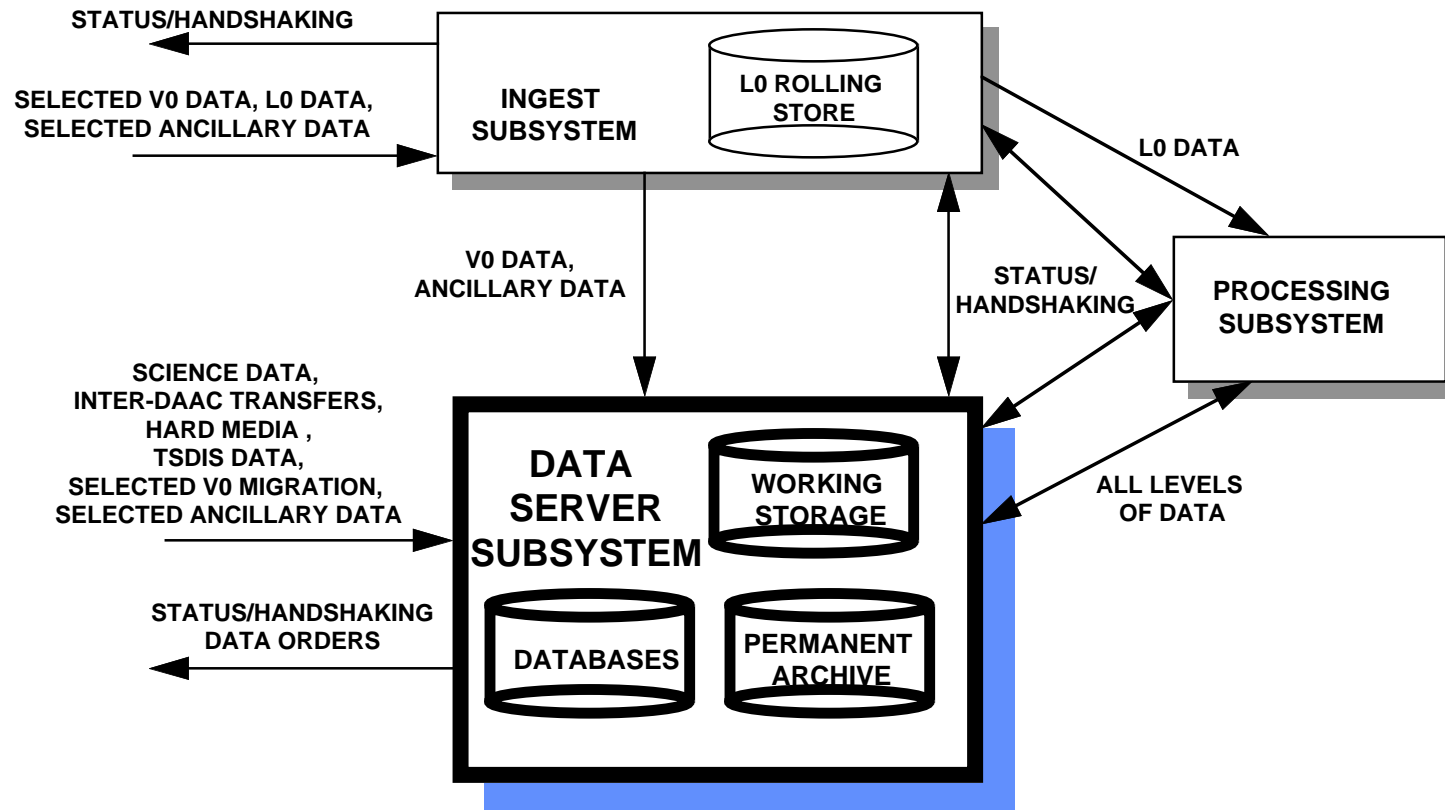# Subsystem Interfaces

Operations Roles and Responsibilities

- **Data Archive Manager (DAM) -- responsible for ingest, archive, and distribution on-line operations including media quality monitoring and equipment/ alarm monitoring**

- **Data Distribution Technician (DDT) -- provides hard media data distribution; monitors electronic distribution**

- **Data Base Administrator (DBA) -- establishes and administers the Data Servers (off-line position)**

- **System Administrator -- system setup, shutdown, startup; other computer ops**

Operator Interfaces

- **GUI interface capability to view:**
  - Data server requests in chronological order
  - By request type and by request priority (e.g., archival request, data request)
  - Storage inventory by data type and start/stop time
  - Logged data accesses by data type, user ID, start/stop time
- **Capability to maintain subscriptions:**
  - View all outstanding subscriptions
  - Cancel subscriptions (with notification to the recipient)
  - Change the associated event or action (post-Release A)

Operator Interfaces (cont.)

- **Additional capabilities for ongoing requests:**
  - Cancel a request (controlled abort with notification msgs)
  - Change the priority of a request

- **Post "A" Capabilities for ongoing requests:**
  - Suspend and resume a session
  - Resume a request
  - Display storage system performance information / hardware status and alarms
  - Display account/billing information by user ID

Data Archival Operational Activities

On-Line Activities

- **Data Server Archive Data Insertion Activities**
- **Hardware Status and Alarm Monitoring**

Off-Line Activities

- **Archive Data Integrity Activities**
- **Subscriptions Monitoring**
- **Configuration Maintenance**

Data Archive On-line Activities

Archive Data Insertion

- Receipt of data from ingest clients and selected other clients, such as Product Generation Subsystem, Users, Other DAACs, etc.

- Metadata Verification

- Archival of data (with checksum calculation and storage of checksum as metadata) for one or more data types (e.g. Science Software, Metadata, Standard Products, etc.)

- Status reporting (to clients and DAM)

- Subscription processing

- Manual Metadata updates within existing formats can be done using Commercial Off The Shelf (COTS) Data Base Administration (DBA) tools

Hardware Status and Alarm Monitoring performed throughout operation

Data Archive Off-line Activities (cont.)

Data Integrity

- Scheduling of general backup* of archival data that can not be reconstructed (e.g. ancillary data, level 1A data, algorithms, databases) is automated; manual backup/restore as needed

- Standard predefined reports generated on automated integrity checks (post Rel. A), e.g.,

  - Correctable, uncorrectable media errors

  - Statistical analysis of media age, use

  - Automatic checks on media readability (scheduled by operations personnel per DAAC policy)

  * **Note:** Enterprise backup (system software) is performed system-wide and provided by System Administrator

Data Archive Off-line Activities (cont.)

Data Integrity (cont.)

- **Capability to specify a set of media to read-check (start/stop times or media ID list) (post Rel. A)**

- **Operator scheduled media refresh (generate a new copy) as required per the results of read-checking (post Rel. A)**

- **Capability to manually insert/retrieve media from a storage device**

Data Archive Off-line Activities (cont.)

- **Hardware Status and Alarm Monitoring**
  - DAM responds to any equipment alarms by performing or scheduling the required corrections or repairs
  - Power-off alarms may require that DAM performs an orderly shut-down of the designated equipment
  - DAM periodically monitors equipment status and alarm logs and takes appropriate action

- **Subscription Monitoring**
  - Data Subscriptions may be monitored by DAM. Any selected data push or data pull subscriptions may be canceled or rescheduled.
  - Privileged users (i.e. operators and user support services) can view, delete, create, and submit subscriptions into the system. USO may view all the subscriptions or filter them by event or user. Subscriptions can be submitted on behalf of a specified user so that the subscription action will be directed towards the specified user. In this way, user services can interact with a user via email or voice and tailor the subscriptions associated with that user.

Archive Off-line Activities

Data Server Configuration Maintenance

- **Baseline Data Server configuration set up at system startup:**
  - **Identification of archive/distribution devices**
  - **Data Server uses Advertising Service APIs for the advertisement of available services (defined in schema)**
  - **Setup of initial tunable parameters**
- **DAAC operations control of Data Server configuration:**
  - **Pre-allocate archive/distribution devices or sets of devices (e.g., pre-allocate devices for 3-day ingest catchup)**
  - **Move devices off-line (e.g., for preventative maintenance) and on-line (and to add new devices)**
  - **Map selected data types to specific storage devices**

Archive Off-line Activities (cont.)

Data Server Configuration Maintenance (cont.)

- **DAAC operations control of Data Server configuration (cont.):**

  Available in Release A

  – **Display archive/distribution device configuration**

  Available post Release A

  – **Set and install tunable parameters (e.g., number of requests allowed in the system, BER thresholds)**
  – **Modify and re-install the Data Server Type Descriptor to: a) add new services, b) modify or delete existing services and c) re-advertise available services**

Archive Off-line Activities (cont.)

Data Server Configuration Maintenance (cont.)

- **Data Server software is initiated at system startup**
  - **Operations capability to shutdown/restart Data Servers**

- **Examples of DAAC operations control of Data Server re-configuration:**
  - **Reconfigure number of concurrent sessions allowed**
  - **Reconfigure the default size allocation of Working Storage per user or per process**
  - **Reconfigure allocation of processes to hardware**